



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

William S. Kennedy et al.

Application No.: 10/623,540

Filed: July 22, 2003

For: ELECTRODE ASSEMBLY FOR  
PLASMA PROCESSING  
APPARATUS

) MAIL STOP AF

) Group Art Unit: 1792

) Examiner: RUDY ZERVIGON

) Confirmation No.: 4866

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants request review of the rejection of Claims 1-5, 8-11, 13, 14, 16-21 and 29-40 in the above-identified application. No amendments are being filed with this Request. This Request is being filed with a Notice of Appeal.

**Overview**

Claims 1-5, 8-11, 13, 14, 16-21 and 29-40 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Katoh (U.S. Patent No. 6,207,006) ("Katoh") and Hao et al. (U.S. Patent No. 6,123,775) ("Hao") in view of Nishimura (Japanese Publication No. 4316709) ("Nishimura"). Claims 1, 10, 17 and 40 are independent claims. Only the rejection of Claim 1 will be addressed, because independent Claims 10, 17 and 40 recite similar subject matter.

**A. Claimed Subject Matter**

Claim 1 recites, *inter alia*, a component of a plasma processing apparatus, comprising, a graphite backing plate bonded to a silicon showerhead electrode; and

a plurality of first fastener members each mounted in an aperture of the backing plate, each first fastener member including a non-circular shaped head configured to prevent rotation of the first fastener members relative to the backing plate (emphasis added).

**B. The Examiner's Untenable Positions**

First, the Official Action takes the position that Katoh discloses a head body **116** (corresponding to the claimed "backing plate") bonded to a porous disk **117** (corresponding to the claimed "showerhead") (Official Action at page 2, ¶2). However, porous disk **117** cannot be "bonded" to head body **116** because Katoh discloses that porous disk **117** is movable up and down relative to head body **116** (column 5, lines 5-8). Accordingly, because the basis for the rejection is an incorrect understanding of Katoh, the rejection should be withdrawn.

Second, the Official Action cites Katoh for disclosure of large-diameter through hole **137** (corresponding to the claimed "through aperture having a first portion") and small diameter through-hole **138** (corresponding to the claimed "second portion") in head body **116**. However, Katoh discloses large-diameter through hole **137** and small diameter through-hole **138** in head body **116** being larger than elevation shaft **134** to provide small clearance **139** and large clearance **140**, respectively (column 6, lines 24-36). Upper ends of the elevation shafts **134** are fixed to an elevation ring **133** and lower ends of the shafts penetrate through and downward from head body **116**. Fixing ring **136** is fixed to the bottom of elevation shafts **134**, which is attached to porous disk **117** by screws (column 5, lines 49-65). To the extent large-diameter through hole **137** and small diameter through-hole **138** are considered the claimed "aperture," there is no fastener having a non-circular

head mounted in each "aperture." Accordingly, the rejection is improper and should be withdrawn.

Third, the Official Action cites "piece set" in large-diameter through hole **137** shown in FIG. 9 of Katoh for the claimed "fastener member" mounted in large-diameter through hole **137** and small diameter through-hole **138**; and fasteners including a circular-shaped head. However, elevation shafts **134** have no "heads" in large-diameter through hole **137** and small diameter through-hole **138**. Accordingly, because the basis for the rejection is an incorrect understanding of Katoh, the rejection should be withdrawn.

Fourth, the Official Action acknowledges various features missing in Katoh (Official Action at pages 12-18; a discussion of Hao and Nishimura begins at page 18). The Official Action acknowledges that Katoh does not disclose a "graphite backing plate" and "silicon showerhead" (Official Action at page 12, ¶ i-ii), but cites Hao for the alleged disclosure of a graphite backing plate and a silicon showerhead electrode (Official Action at page 18, lines 13-14). The Official Action further acknowledges that Katoh does not disclose fastener members with a "non-circular shaped head" or "T-nuts having a T-shape" and cites Nishimura for the disclosure of a T-slot nut **10** (Official Action at page 18, lines 15-20).

Fifth, the Official Action contents that it would have been obvious to use Hao's materials for Katoh's apparatus (Official Action at page 19); and replace Katoh's "piece set" with Nishimura's T-slot nut **10**. However, making porous disk **117** of Hao's materials will not produce a showerhead electrode bonded to a backing plate and use of T-slot nut **10** in Katoh makes absolutely no sense. Katoh uses elevation shafts **134** extending through and beyond large-diameter through hole **137** and small diameter through-hole **138**; there are no "heads" of fasteners in large-diameter

through hole **137**. The Examiner's proposed modification of Katoh is illogical and to the extent understood fails to produce the claimed subject matter. Accordingly, because the basis for the rejection is an incorrect understanding of Katoh, the rejection should be withdrawn.


**Conclusion**

For at least the foregoing reasons, Applicant respectfully submits that all pending claims are allowable, and this application is in condition for allowance.

Respectfully submitted,

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